

01

$$'COST = \$72' \Rightarrow (434F53543D243732)_h$$

02

$$(01010011010101000100111101010000)_b = (53544F50)_h = 'STOP'$$

03

a.

Codificador

b.

Codificador

c.

Decodificador

d.

Decodificador

| A | B | C | D | SARDA ATIVA |
|---|---|---|---|-------------|
| 0 | 0 | 0 | 0 | S_0 |
| 0 | 0 | 0 | 1 | S_1 |
| 0 | 0 | 1 | 0 | S_2 |
| 0 | 0 | 1 | 1 | S_3 |

| A | B | C | D | SARDA ATIVA |
|---|---|---|---|-------------|
| 0 | 1 | 0 | 0 | S_4 |
| 0 | 1 | 0 | 1 | S_5 |
| 0 | 1 | 1 | 0 | S_6 |
| 0 | 1 | 1 | 1 | S_7 |

| A | B | C | D | SARDA ATIVA |
|---|---|---|---|-------------|
| 1 | 0 | 0 | 0 | S_8 |
| 1 | 0 | 0 | 1 | S_9 |
| 1 | 0 | 1 | 0 | X |
| 1 | 0 | 1 | 1 | X |

| A | B | C | D | SARDA ATIVA |
|---|---|---|---|-------------|
| 1 | 1 | 0 | 0 | X |
| 1 | 1 | 0 | 1 | X |
| 1 | 1 | 1 | 0 | X |
| 1 | 1 | 1 | 1 | X |

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 1 | 0 | 0 | 0 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |

$$S_0 = \bar{A}\bar{B}\bar{C}\bar{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 1 | 0 | 0 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |

$$S_1 = \bar{A}\bar{B}C\bar{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 1 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |

$$S_2 = \bar{B}C\bar{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 1 | 0 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |

$$S_3 = \bar{B}C\bar{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 1 | 0 | 0 | 0 |
| 11 | x | x | x | x |
| 10 | 0 | 0 | x | x |

$$S_4 = B\bar{C}\bar{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 1 | 0 | 0 |
| 11 | x | x | x | x |
| 10 | 0 | 0 | x | x |

$$S_5 = B\bar{C}D$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 0 | 0 | 1 |
| 11 | x | x | x | x |
| 10 | 0 | 0 | x | x |

$$S_6 = B\bar{C}\bar{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 0 | 1 | 0 |
| 11 | x | x | x | x |
| 10 | 0 | 0 | x | x |

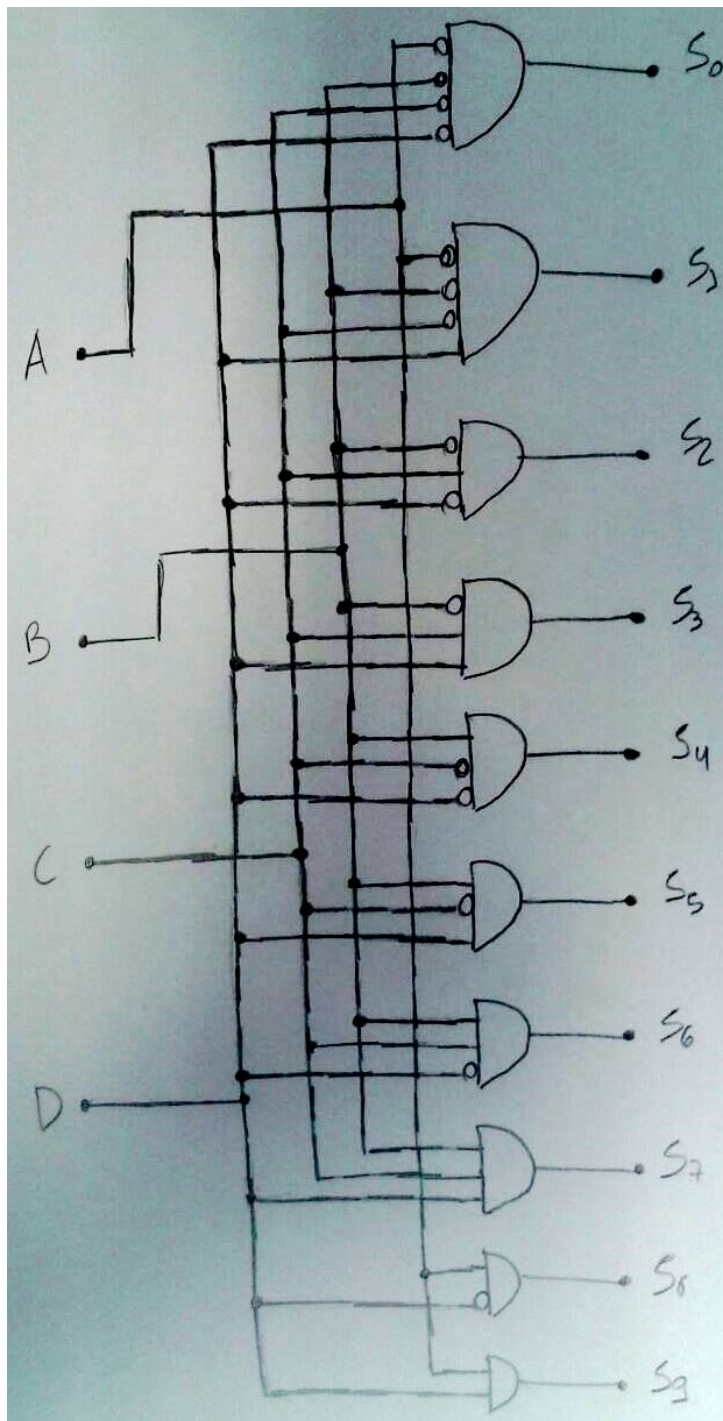
$$S_7 = BCD$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | x | x | x | x |
| 10 | 1 | 0 | x | x |

$$S_8 = A\bar{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | x | x | x | x |
| 10 | 0 | 1 | x | x |

$$S_9 = AD$$



05

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 1 | 1 | 1 |
| 11 | x | x | x | x |
| 10 | 1 | 1 | x | x |

$$S_3 = A + BD + BC$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 0 | 1 | 1 | 1 |
| 01 | 1 | 0 | 0 | 0 |
| 11 | x | x | x | x |
| 10 | 0 | 1 | x | x |

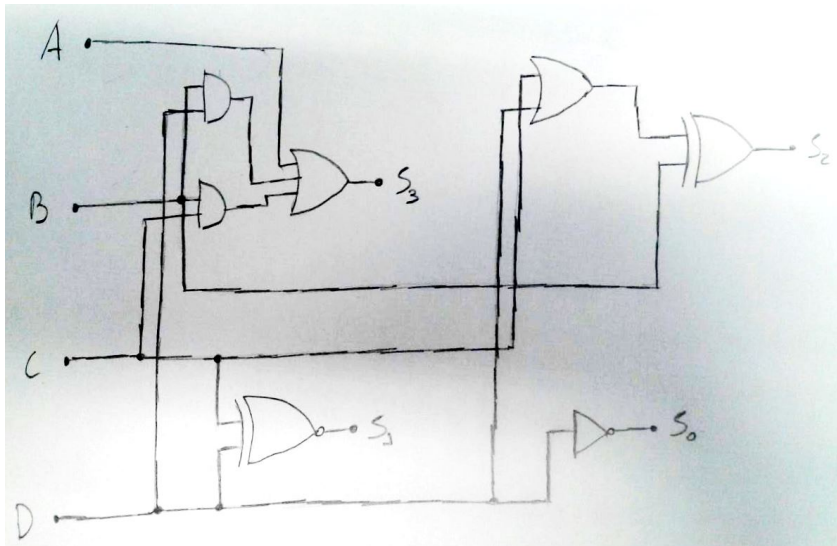
$$S_2 = \overline{B}\overline{C}\overline{D} + \overline{B}D + \overline{B}C = \overline{B}\overline{C}\overline{D} + \overline{B}(C + D) = \overline{B}\overline{C} + \overline{B}(C + D) = B \oplus (C + D)$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 1 | 0 | 1 | 0 |
| 01 | 1 | 0 | 1 | 0 |
| 11 | x | x | x | x |
| 10 | 1 | 0 | x | x |

$$S_1 = \overline{C}\overline{D} + CD = \overline{C} \oplus \overline{D}$$

| AB \ CD | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|
| 00 | 1 | 0 | 0 | 1 |
| 01 | 1 | 0 | 0 | 1 |
| 11 | x | x | x | x |
| 10 | 1 | 0 | x | x |

$$S_0 = \overline{D}$$



06

| G_3 | G_2 | G_1 | G_0 | B_3 | B_2 | B_1 | B_0 |
|-------|-------|-------|-------|-------|-------|-------|-------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |

| G_3 | G_2 | G_1 | G_0 | B_3 | B_2 | B_1 | B_0 |
|-------|-------|-------|-------|-------|-------|-------|-------|
| 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 |

| G_3 | G_2 | G_1 | G_0 | B_3 | B_2 | B_1 | B_0 |
|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |

| G_3 | G_2 | G_1 | G_0 | B_3 | B_2 | B_1 | B_0 |
|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |

| G_3G_2 | 00 | 01 | 11 | 10 |
|----------|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 0 | 0 | 0 | 0 |
| 11 | 1 | 1 | 1 | 1 |
| 10 | 1 | 1 | 1 | 1 |

$$B_3 = G_3$$

6.60
6.62

| | 00 | 01 | 11 | 10 |
|----|----|----|----|----|
| 00 | 0 | 0 | 0 | 0 |
| 01 | 1 | 1 | 1 | 1 |
| 11 | 0 | 0 | 0 | 0 |
| 10 | 1 | 1 | 1 | 1 |

$$B_2 = \overline{G_3}G_2 + G_3\overline{G_2} = G_3 \oplus G_2$$

6.61
6.62

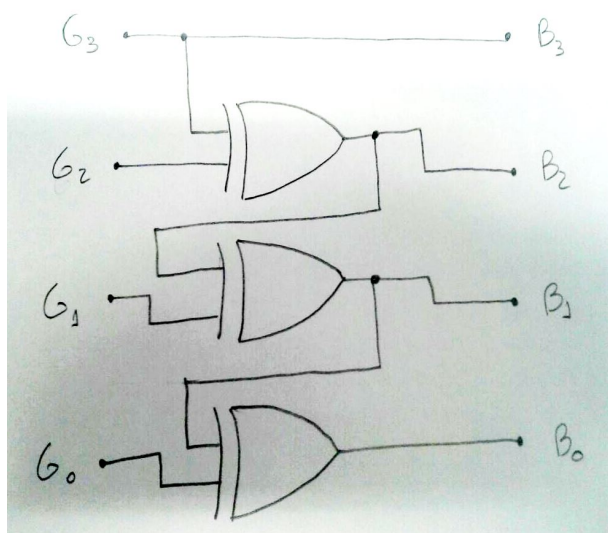
| | 00 | 01 | 11 | 10 |
|----|----|----|----|----|
| 00 | 0 | 0 | 1 | 1 |
| 01 | 1 | 1 | 0 | 0 |
| 11 | 0 | 0 | 1 | 1 |
| 10 | 1 | 1 | 0 | 0 |

$$B_1 = \overline{G_3}\overline{G_2}G_1 + \overline{G_3}G_2\overline{G_1} + G_3G_2G_1 + G_3\overline{G_2}\overline{G_1} = \overline{G_3}(G_2 \oplus G_1) + G_3(\overline{G_2} \oplus \overline{G_1}) = G_3 \oplus G_2 \oplus G_1$$

6.62
6.62

| | 00 | 01 | 11 | 10 |
|----|----|----|----|----|
| 00 | 0 | 1 | 0 | 1 |
| 01 | 1 | 0 | 1 | 0 |
| 11 | 0 | 1 | 0 | 1 |
| 10 | 1 | 0 | 1 | 0 |

$$B_0 = \overline{G_3}\overline{G_2}\overline{G_1}G_0 + \overline{G_3}\overline{G_2}G_1\overline{G_0} + \overline{G_3}G_2\overline{G_1}\overline{G_0} + \overline{G_3}G_2G_1G_0 + G_3\overline{G_2}\overline{G_1}G_0 + G_3\overline{G_2}G_1\overline{G_0} + G_3G_2\overline{G_1}\overline{G_0} + G_3G_2G_1G_0 = \overline{G_3}\overline{G_2}(G_1 \oplus G_0) + \overline{G_3}G_2(\overline{G_1} \oplus \overline{G_0}) + G_3\overline{G_2}(G_1 \oplus G_0) + G_3G_2(\overline{G_1} \oplus \overline{G_0}) = (G_1 \oplus G_0)(\overline{G_3} \oplus G_2) + (G_1 \oplus G_0)(G_3 \oplus G_2) = G_3 \oplus G_2 \oplus G_1 \oplus G_0$$



07

A solução dessa questão se encontra a partir do slide 23 da Aula 7.